

Understanding the Great Recession

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Disclaimer: The views expressed are those of the authors and not necessarily those of the Federal Reserve Board or any other person associated with the Federal Reserve System.

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 - Fall and slow recovery in TFP.

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- Use estimated model to analyze post-2008 data.

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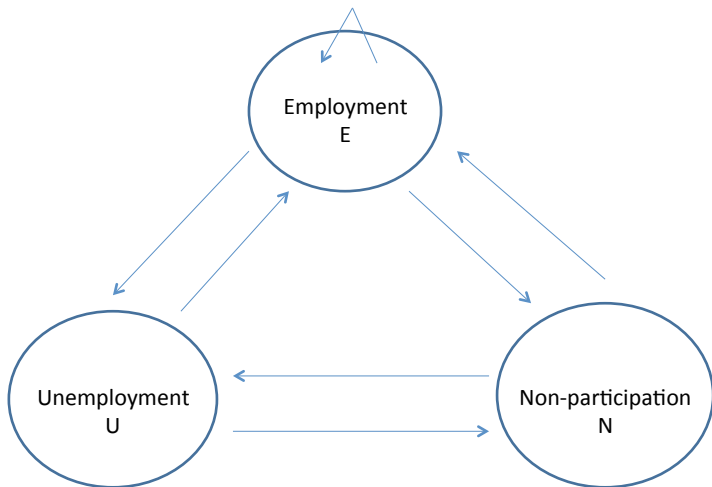
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- Derive wage inertia as an equilibrium outcome.

Labor Market

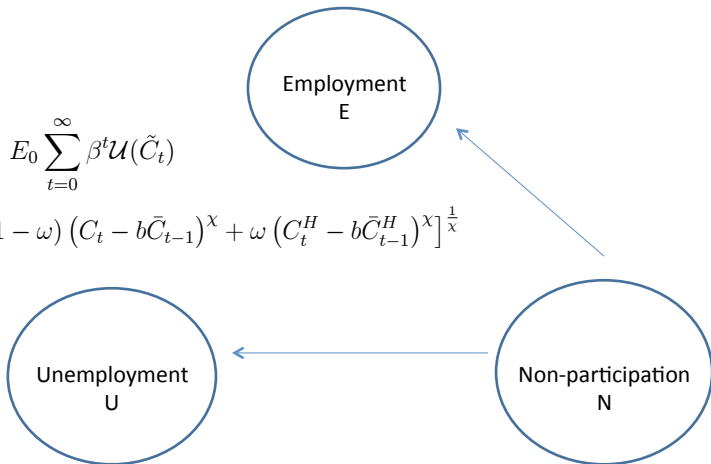
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$$E_0 \sum_{t=0}^{\infty} \beta^t \mathcal{U}(\tilde{C}_t)$$

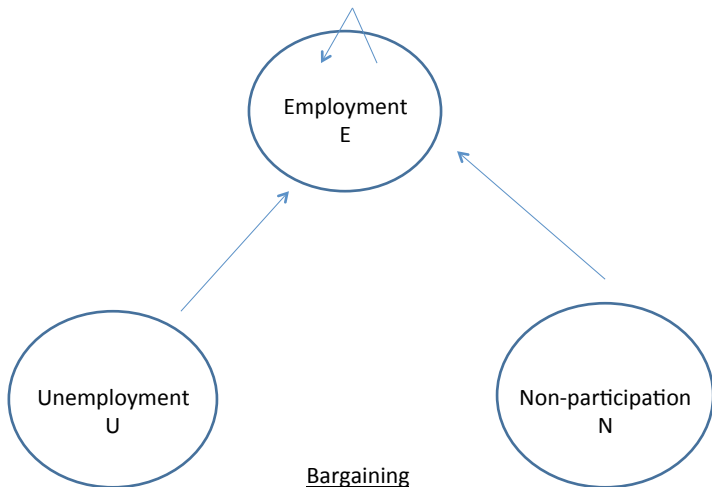
$$\tilde{C}_t = [(1 - \omega)(C_t - b\bar{C}_{t-1})^x + \omega(C_t^H - b\bar{C}_{t-1}^H)^x]^{\frac{1}{x}}$$



-Household labor force decision

-Split between U and E determined by job-finding rate.

Labor Market



Bargaining

Three types of worker-firm meetings:

i) E to E , ii) U to E, iii) N to E

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- After expansionary shock, rise in wages is relatively small.
 - See CET (2013), for intuition in a DSGE model with capital.

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 - Each day that negotiations continue means firm loses production for that day and workers loses wage.

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- Our labor market structure.

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- Elasticity of substitution between home and market goods: 3.
 - set *a priori*, see Aguiar-Hurst-Karabarbounis (2012).

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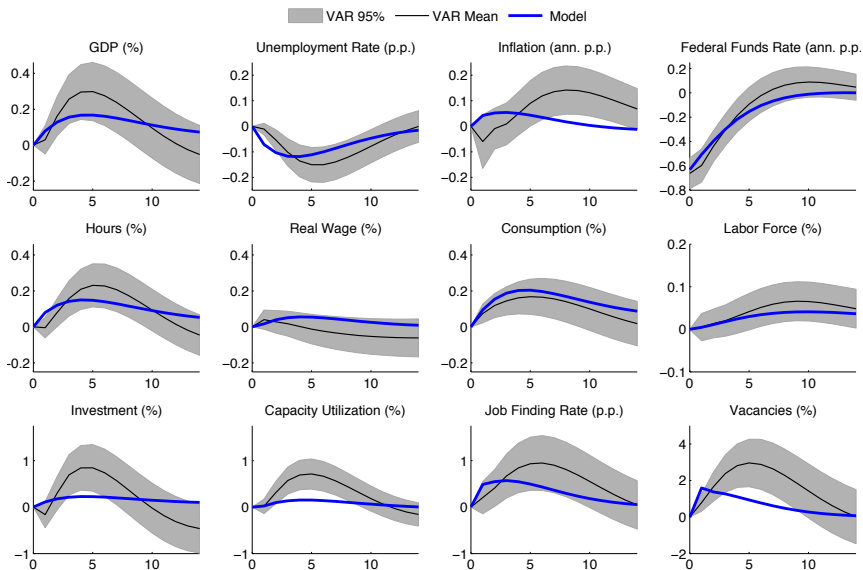
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- Standard DMP model requires replacement ratio $> 95\%$ to reproduce volatility of labor market data (Hagedorn-Manovskii).

Responses to a Monetary Policy Shock

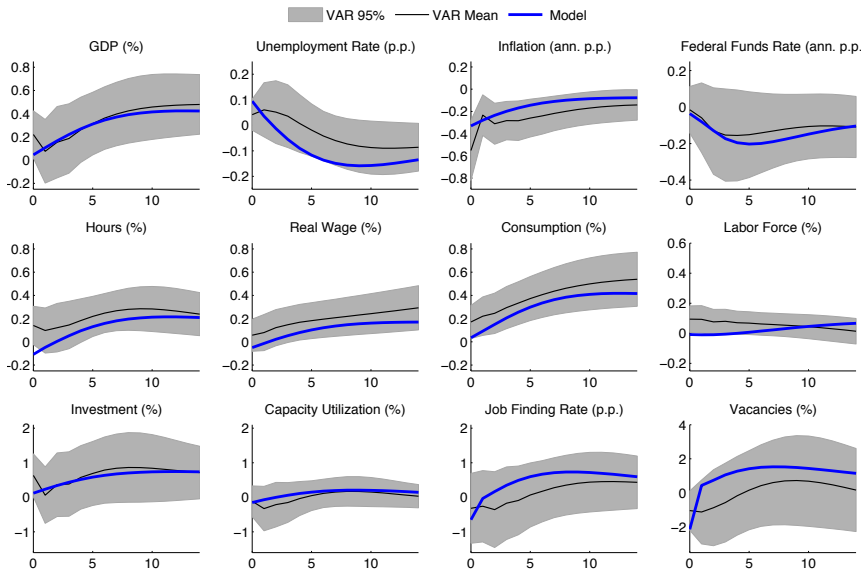
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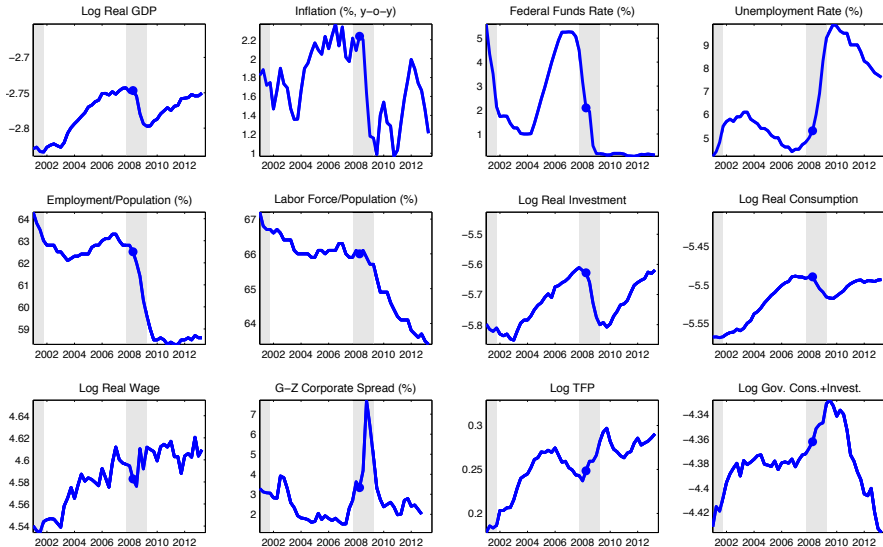
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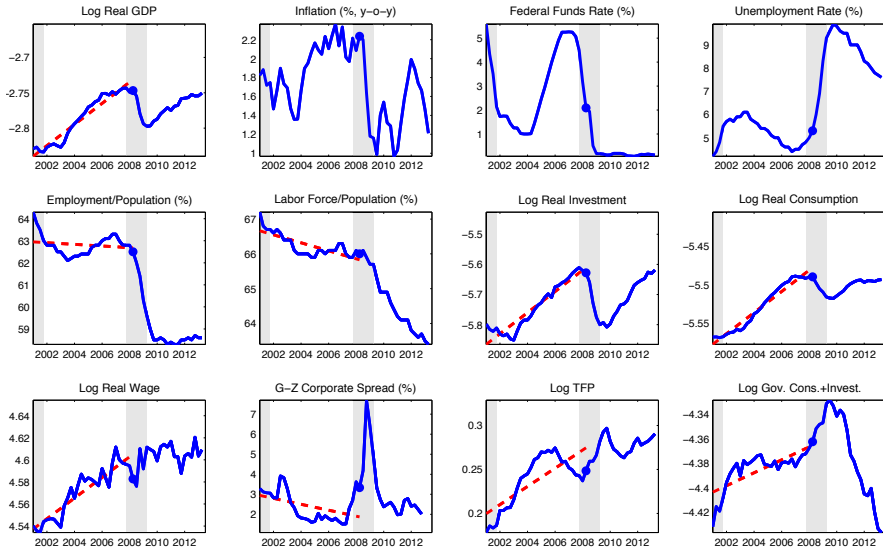
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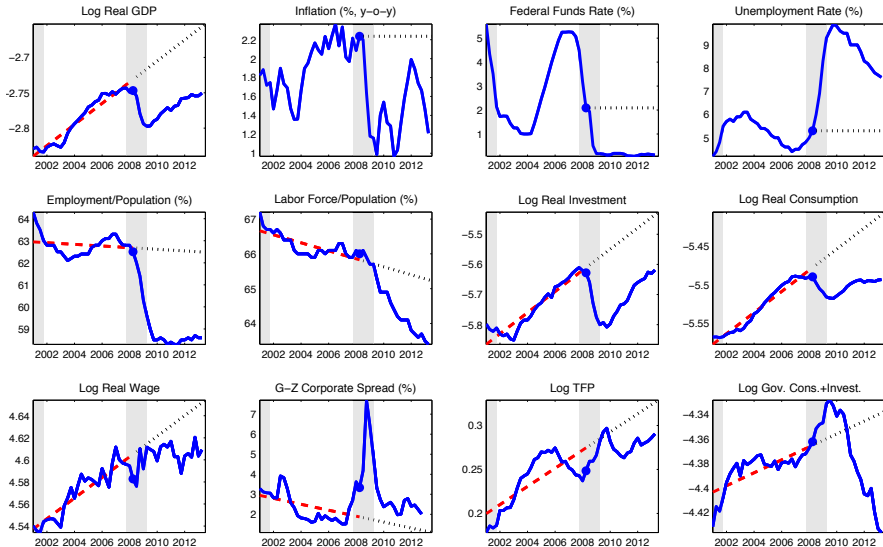
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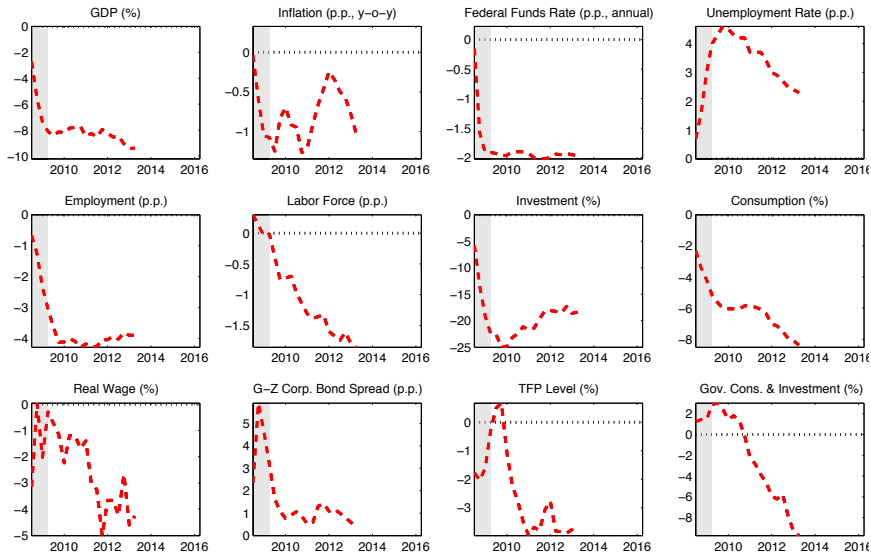
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The U.S. Great Recession: Data Targets

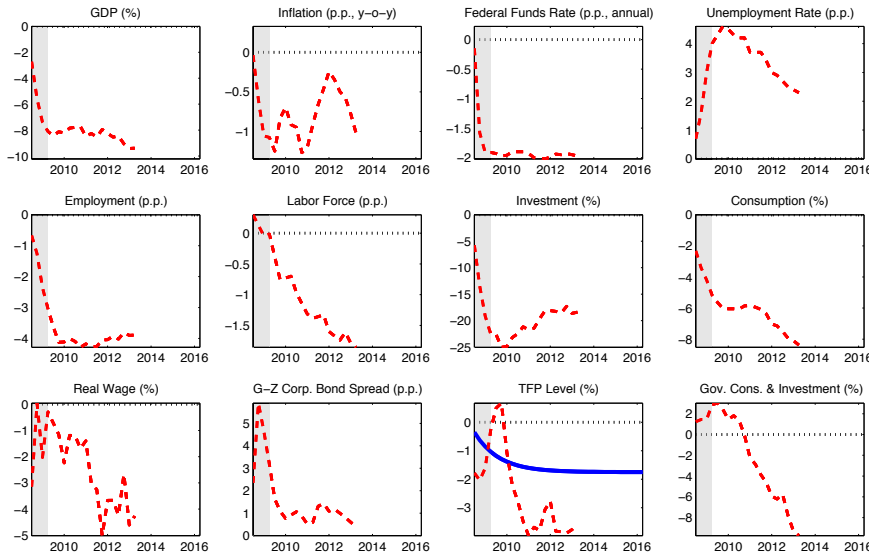
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- ① *Consumption wedge*, Δ_t^b : motivated by ZLB literature stressing consumption drop. Implemented as in Smets-Wouters (2007):

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 - Higher financial wedge directly increases cost to firms.

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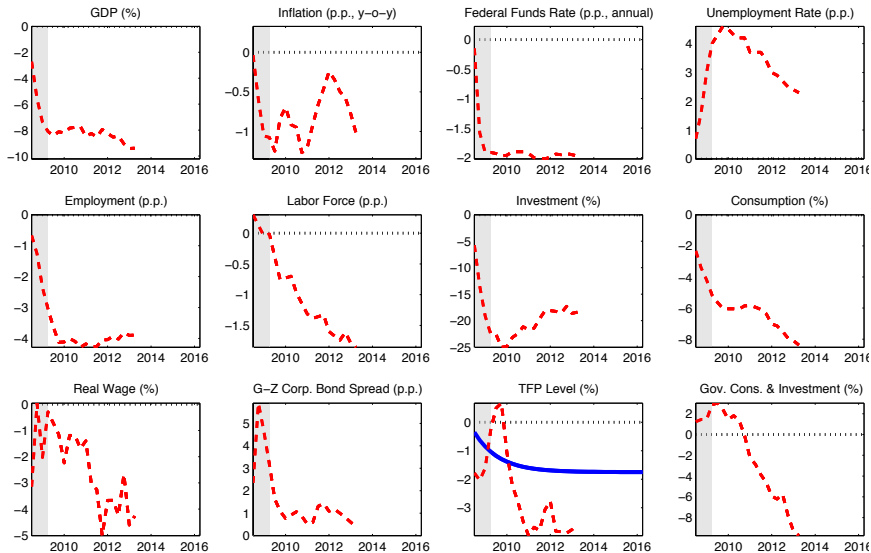
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- Stochastic simulation starting 2008Q2 (nonlinear model, no perfect foresight).

The U.S. Great Recession: Data vs. Model

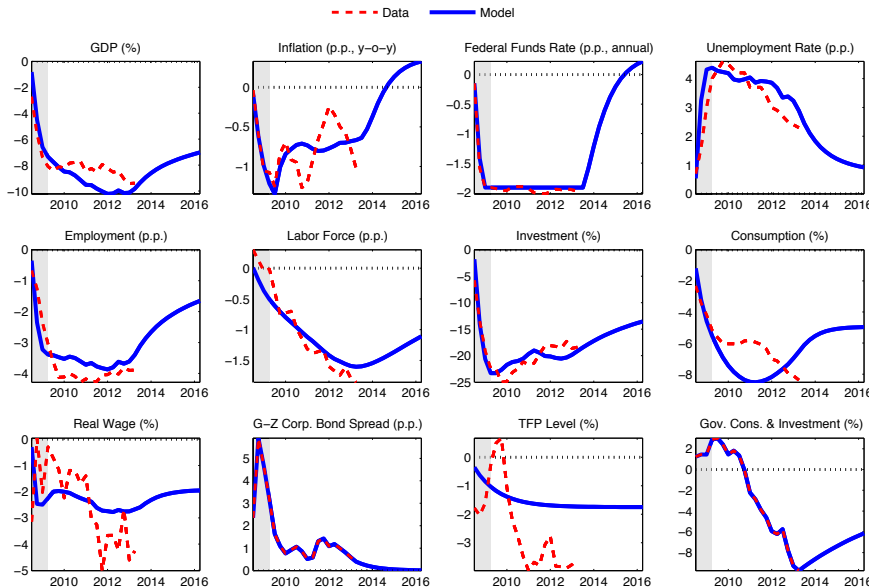
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- We investigate the effect of a shock by shutting it off.
 - Resulting decomposition is not additive because of nonlinearity.

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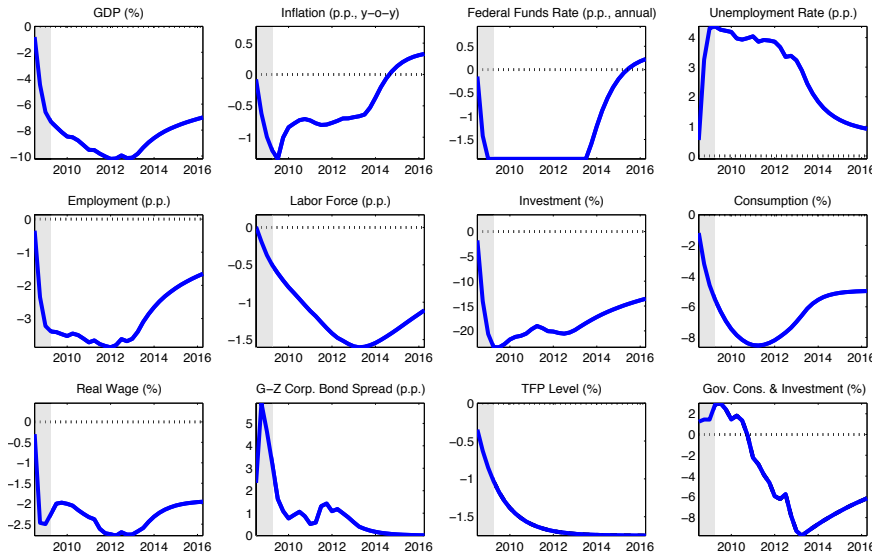
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 - Recession leads to lower marginal costs -> inflation falls.

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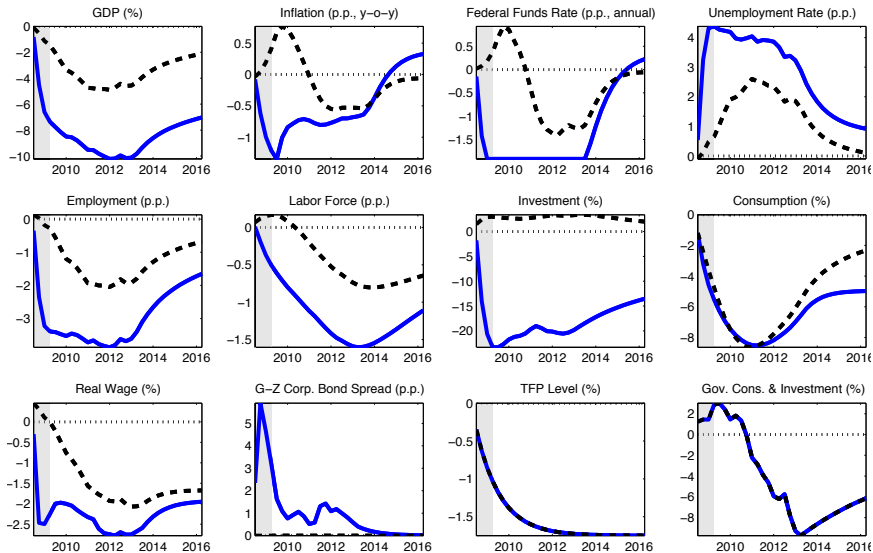
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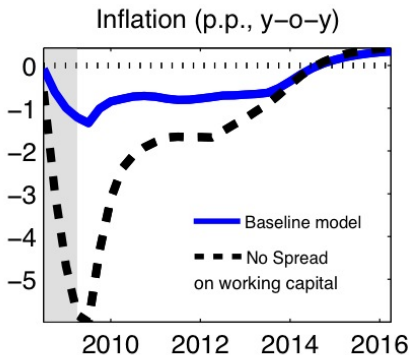
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 - Both raise countervailing pressure on inflation.

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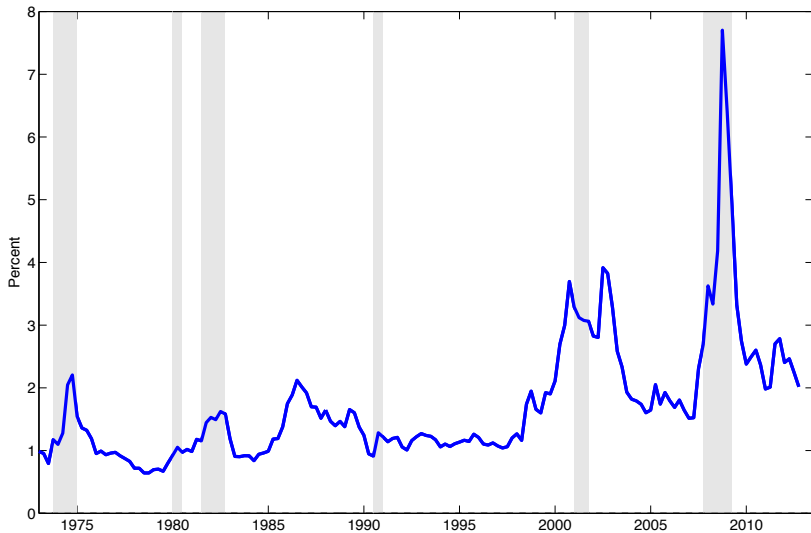
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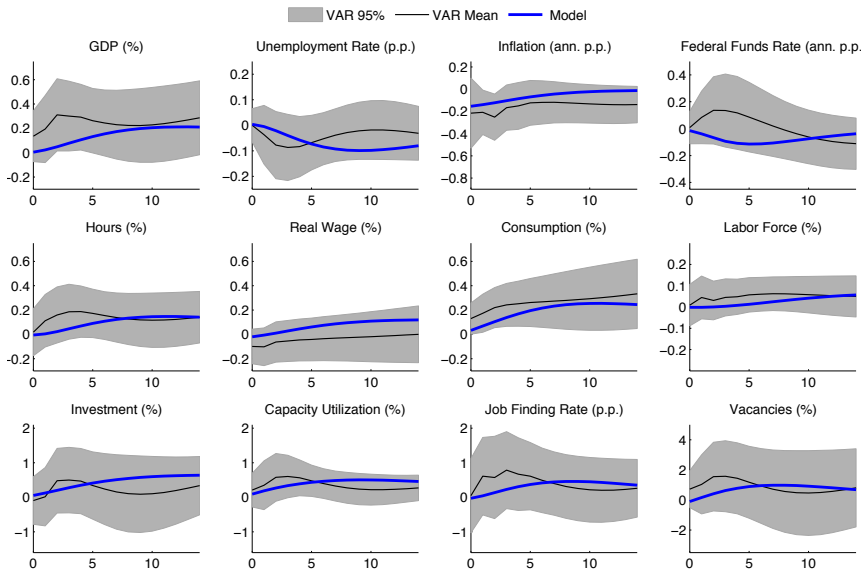
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- One response: Phillips curve got flat or always was very flat.
- Alternative: standard Phillips curve misses working capital term including financial wedge.
 - Usually that term is not very important, but it *was* in post-2008 period.

Gilchrist-Zakrajsek Corporate Spread



Annex

Responses to an Invest. Technology Shock



Notes: x-axis in quarters.

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- Solve nonlinear model, imposing certainty equivalence.